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TRANSACTIONS.

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- o*- and *p*-Toluenesulfonyloxalines (PYMAN and RAVALD), T., 1426.
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- Toluene-2-azo-8-naphthol**, 3:5-dinitro- (MORGAN and DREW), T., 791.
- o*- and *m*-Toluenesulfo- α -naphthylamines, and their salts (TRÖGER and LANGE), A., i, 892.
- Toluenesulfo- α -naphthylamidenehydrazines**, and their hydrochlorides (TRÖGER and WUNDERLICH), A., i, 892.
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- Toluenesulfo- α -naphthylidiazosulphonic acids**, potassium salts (TRÖGER and LANGE), A., i, 892.
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- o*-, *m*-, and *p*-Toluenesulfo- α -naphthylhydrazinesulphonic acids, and their salts (TRÖGER and LANGE), A., i, 891.
- Toluenesulfo- α -naphthyl-*o*-hydroxybenzylidenehydrazines**, and their hydrochlorides (TRÖGER and LANGE), A., i, 892.
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- o*-Toluenesulforesorcinol, *p*-nitro- (LEONARD and BROWNE), A., i, 770.
- 3:5-dinitro-, and its triacetyl derivative (MORGAN and DREW), T., 791.
- o*-Toluenediazoaminobenzene-*p*-sulphonic acid, 5-nitro- (LEONARD and BROWNE), A., i, 770.
- o*-Toluenediazoamino-*p*-nitrobenzene, 5-nitro- (LEONARD and BROWNE), A., i, 770.
- o*-Toluenediazoaminotoluenes, 5-nitro- (LEONARD and BROWNE), A., i, 770.
- p*-Toluenediazohydroxylamino-*p*-bromobenzene (BAMBERGER, LANDAU, BLASKOFF, HINDERMANN, and BÜSDORF), A., i, 772.
- p*-Toluenediazoxydiazo-*p*-toluenecarboxamidophenylcarbamide (HELLER and MEYER), A., i, 185.
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- 4-*p*-Toluenesulphonamidoanthraquinone, chlorohydroxy-, and hydroxy- (ULLMANN and CONZATTI), A., i, 489.
- 4-Toluenesulphonamido-3-methylantraquinone, 1-hydroxy- (ULLMANN and SCHMIDT), A., i, 53.
- p*-Toluenesulphonocyclohexylamide (SKITA, ROLFES, HILS, and KIRCHHOFF), A., i, 608.
- Toluenesulphonic acid**, *N*-toluenesulphonyl-*p*-aminophenyl ester, and its *N*-methyl derivative (REBER and SIEGWART), A., i, 308.
- o*-Toluenesulphonic acid, 4-nitro- (HINTIKKA), A., i, 668.
- p*-Toluenesulphonic acid, preparation of ω -halogen derivatives of (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 23.
- Toluene-4-sulphonitroamide**, and 2-nitro-, metallic salts (MATHEWS), A., i, 379.
- o*-*p*-Toluenesulphonylaminoisobutyric acid (FICHTER and SCHMIDT), A., i, 824.

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- 2-*p*-Toluenesulphonylamino-phenyl *p*-xylyl ketone (SCHAARSCHMIDT and HERZENBERG), A., i, 744.
- p*-Toluenesulphonylnitrophenylmethanes (TRÖGER and NOLTE), A., i, 830.
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- Toluic acids, *p*-bromophenacyl esters (JUDEFIND and REID), A., i, 481.
- o*-Toluidine, 5:6-dinitro- (BRADY and TAYLOR), T., 879.
- m*-Toluidine stannichloride (DRUCE), A., i, 89.
- o*- and *m*-Toluidines, chloronitro- (MORGAN and DREW), T., 787.
- a*-*p*-Toluidino- γ -dimethylaminoisopropyl alcohol (FOURNEAU and RANEDO), A., i, 672.
- 4-*p*-Toluidino-3-methylanthraquinone, 1-hydroxy- (ULLMANN and SCHMIDT), A., i, 53.
- 3-*p*-Toluidino-6-methylisoxazole (WORRALL), A., i, 501.
- Toluoil bromides (ADAMS and ULICH), A., i, 387.
- o*-, *m*-, and *p*-Toluoil-*o*-benzoic acids, chlorohydroxy- and hydroxy-derivatives (ULLMANN and SCHMIDT), A., i, 53.
- o*-*p*-Toluoilctoic acid (BORSCHKE), A., i, 25.
- 8-*p*-Toluoilvaleric acid (BORSCHKE), A., i, 25.
- o*-Tolyl β -bromoethyl ether (RINDFUSZ, GINNINGS, and HARNACK), A., i, 396.
- γ -bromopropyl ether (RINDFUSZ, GINNINGS, and HARNACK), A., i, 395.
- β -hydroxyethyl ether (RINDFUSZ, GINNINGS, and HARNACK), A., i, 395.
- γ -hydroxypropyl ether (RINDFUSZ, GINNINGS, and HARNACK), A., i, 395.
- m*-Tolyl methyl ether, 2:6-dinitro- (DREW), T., 1618.
- p*-Tolyl methyl ether, compounds of mercuric acetate with (MANCHOT and BOSSENECKER), A., i, 780.
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- m*-Tolylacetaldehyde, and its hydrazones (CURTIUS and MARANGOLO), A., i, 188.
- o*-, *m*-, and *p*-Tolylaminocamphor, optical rotation of (B. K. and D. SINGH, DUTT, and G. SINGH), T., 982.
- N*(*o*- and *m*-Tolylarsinic acid)-glycines, and their derivatives (JACOBS and HANDELBERGER), A., i, 109.

Toluene compounds, Me = 1.

- m*-Tolyl isobutenyl ketone, *p*-hydroxy- (v. AUWERS and LÄMMERHIRT), A., i, 868.
- γ -*p*-Tolyl-*n*-butyric acid (BORSCHKE), A., i, 25.
- m*-Tolyl isobutyl ketone, *p*-hydroxy-, and its semicarbazone (v. AUWERS and LÄMMERHIRT), A., i, 868.
- o*- and *p*-Tolylcarbamic acids, *n*-butyl esters of (CHATTAWAY and SAKKENS), T., 711.
- m*-Tolyl- β -chloroisobutyl ketone, *p*-hydroxy- (v. AUWERS and LÄMMERHIRT), A., i, 868.
- m*-Tolyl β -chloropropyl ketone, 4-hydroxy- (v. AUWERS and DÖLL), A., i, 872.
- m*-Tolylenebisaminocamphor, preparation and optical rotation of (B. K. and D. SINGH, DUTT, and G. SINGH), T., 985.
- m*-Tolylenebisiminocamphor, preparation and optical rotation of (B. K. and D. SINGH, DUTT, and G. SINGH), T., 984.
- Tolylene-diamines, chloro- (MORGAN and DREW), T., 786.
- β -*p*-Tolylethyl alcohol (ALIWZOG), A., i, 160.
- p*-Tolylglyoxal, dinitro-osazone (v. AUWERS and LÄMMERHIRT), A., i, 392.
- 4-*m*-Tolylglyoxaline, 2:4'-diamino-, and its salts (PYMAN and RAVALD), T., 1428.
- m*-Tolylhydrazine, 4:6-di- and 2:4:6-trinitro-, and their derivatives (GIVA), A., i, 100.
- m*-Tolylmeconine, 6'-hydroxy-, and its methyl ether (BISTRYZCKI and ZEX-RUFFINEN), A., i, 437.
- m*-Tolylmethylnitrosoamine (SCHMIDT and FISCHER), A., i, 728.
- o*-, *m*-, and *p*-Tolylloxysuccinic acids, preparation of, and their derivatives (HIGGINBOTHAM and STEPHEN), T., 1534.
- β -*p*-Tolylxyrotonic acid, and its ethyl ester (RUHRMANN), A., i, 326.
- m*-Tolylphthalide, 6-hydroxy-, and its derivatives (BISTRYZCKI and ZEX-RUFFINEN), A., i, 436.
- m*-Tolyl styryl ketone, 4-hydroxy- (v. AUWERS and DÖLL), A., i, 871.
- 4-*o*- and *p*-Tolyl-1:4-sulphonazan (HELFRICH and REID), A., i, 525.
- Tolylsulphone, *o*-hydroxy-, and its derivatives (REVERDIN and ROETHLISBERGER), A., i, 611.
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- Tomatoes**, citric acid in the juice of (KREMER and HALL), A., i, 273.
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- Triacetylmethylglucoside- β -bromo- and - β -chloro-hydrins** (FISCHER, BERGMANN, and SCHOTTE), A., i, 422.
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- Triaquechromium**, *tri*-, *tetra*-, and *penta*-cyano-, and their salts (BJERRUM), A., i, 374.
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- Tri-3-carbazylcarbinol**, and its salts (COPISAROW), T., 1545.
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- Tricratodiferic acid**, and its salts (BELLONI), A., i, 816.
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- Triethylene**, constitution of, and α -amino-, and its derivatives (LIPP), A., i, 491.
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- Triethylene disulphide**, chloromercaptide and dimercaptan of (RÄV), T., 1090.
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- Triethyl- α -propylammonium mercuri-iodide**, crystallography of (BARKER and PORTER), T., 1311.
- 1:2:3-Triethyltetrahydronaphthalene** (FLEISCHER, SIEPERT, and ECKERT), A., i, 621.
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- 3:5:7-Trimethoxy-2-*p*-anisylpyrylium chloride** (WILLSTÄTTER and ZECHMEISTER), A., i, 561.
- 3:4:5-Trimethoxybenzanilide** (SONN and MÜLLER), A., i, 59.
- 3:4:5-Trimethoxybenzoic acid**, salts of (ALMCHANDANI and MEIDRUM), T., 967.
- 2:3:4-Trimethoxybenzonitrile** (KARRER, REHMANN, and ZELLER), A., i, 390.
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- 7:3':4'-Trimethoxy-3-benzyl-2:3-dihydro- γ -benzopyrone** (PFEIFFER and EMMER), A., i, 562.
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- 3:5:7-Trimethoxycoumarin** (WILLSTÄTTER and ZECHMEISTER), A., i, 561.
- aa β -Trimethoxypentane** (HELPERICH), A., i, 11.
- 2:4:6-Trimethoxyphenyl 3:4 dimethoxy- β -phenylethyl ketone** (NIERENSTEIN), T., 976.
- 3:4:5-Trimethoxyphthalic acid**, and its anhydride, preparation of (ALMCHANDANI and MEIDRUM), T., 969.
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- 3:4:5-Trimethoxyphthalide**, preparation of (ALMCHANDANI and MEIDRUM), T., 969.

- 3:4:5-Trimethoxyphthalidecarboxylic acid, methyl ester (HERZIG, BRUNNER, and SCHLEIFFER), A., i, 847.
- Trimethyldiaminodiphenylamine (WIELAND and SCHAMBERG), A., i, 768.
- Trimethylammonium mercuri-iodide, preparation, crystallography, and optical properties of (JAMESON and WHERRY), A., i, 371.
- Trimethylaniline-*p*-sulphonic acid, action of, with acetic and hydrochloric acids (KATAYAMA and YAMADA), A., ii, 673.
- Trimethylarsine, and its selenide (RENSHAW and HOLM), A., i, 602.
- 2:4:6- and 3:4:6-Trimethyl- Δ^2 -benzopyrens (v. AUWERS and LÄMMERHIRT), A., i, 869.
- 2:4:6- and 3:4:6-Trimethyldihydro-1:4-benzopyranols (v. AUWERS and LÄMMERHIRT), A., i, 869.
- 2:5:7-Trimethyl-2:3-dihydrobenzopyrone, and its derivatives (v. AUWERS and DÖHL), A., i, 871.
- 2:2:6-Trimethyl-2:3-dihydro-1:4-benzopyrone, semicarbazone of, and 3-bromo- (v. AUWERS and LÄMMERHIRT), A., i, 868.
- Trimethylenediglycine, β -hydroxy-, barium salts of (KRAUSE), A., i, 218.
- Trimethylene glycol benzoate and nitrobenzoates (FISCHER, PEÄHLER, and BRAUNS), A., i, 841.
- estimation of, in glycerol (ROJAHN), A., ii, 336.
- $\alpha\alpha\gamma$ -Trimethyl- β -ethylglutaric acid (MEERWEIN and STEINACKER), A., i, 845.
- $\beta\beta\beta$ -Trimethylethylphenol (BYGDÉN), A., i, 647.
- $\alpha\gamma\gamma$ -Trimethyl- β -ethyl- β -valerolactone (MEERWEIN and STEINACKER), A., i, 845.
- Trimethyl- γ -fructose (IRVINE and STEELE), T., 1485.
- Trimethylisogalloflavin, products of distillation of, into carbon dioxide (HERZIG, EYEWELING, and BRUNNER), A., i, 864.
- Trimethyl glucose (HAWORTH), T., 207.
- Trimethylcycloheptanetricarboxylic acid, and its amide (BUCHNER and SCHOTTENHAMMER), A., i, 550.
- Trimethylcycloheptatrienecarboxylic acid, and its amide and ethyl ester (BUCHNER and SCHOTTENHAMMER), A., i, 549.
- 1:2:4-Trimethylcyclohexane, and 5-amino-, and 5-hydroxy-, and their derivatives (SKITA and HENNENBRUCH), A., i, 833.
- 1:3:5-Trimethylcyclohexane, 5-chloro- (v. AUWERS), A., i, 722.
- 1:2:5-Trimethylcyclohexan-4-ol (v. AUWERS), A., i, 723.
- cis*-1:2:4-Trimethylcyclohexan-5-one, and its derivatives (SKITA and HENNENBRUCH), A., i, 833.
- 1:2:5-Trimethylcyclohexan-4-one, and its semicarbazone (v. AUWERS), A., i, 723.
- 1:2:6-Trimethyl- Δ^4 -cyclohexene (v. AUWERS), A., i, 723; (SKITA and HENNENBRUCH), A., i, 834.
- Trimethylcyclohexylammonium hydroxide and iodide (SKITA, ROLFES, ILLS, and KIRCHHOFF), A., i, 607.
- 3:3:4-Trimethylhydriodone, 7-hydroxy-, and its derivatives (v. AUWERS and LÄMMERHIRT), A., i, 868.
- Trimethylindamine, and its dinitrosamine (WIELAND and SCHAMBERG), A., i, 768.
- 1:2:3-Trimethylindazolium iodide (v. AUWERS and DUESBERG), A., i, 639.
- Trimethyl inulin (IRVINE and STEELE), T., 1484.
- 1:2:2-Trimethyl-3-methylenecyclopentane-1-carboxylic acid, ethyl ester, and bromo- (RUPE and JÄGGI), A., i, 846.
- 1:2:2-Trimethylcyclopentane-1:3-dimethanol (RUPE and JÄGGI), A., i, 846.
- 2:4:6-Trimethylpyrithionium perchlorate (HANTZSCH), A., i, 72.
- Trimethylsulphine haloids, compounds of, with metallic haloids (BLÄTLER), A., i, 522.
- Trimethyltelluronium iodide, preparation of (VERNON), T., 894.
- Tri- α -naphthylarsine (MATSUMIYA), A., i, 777.
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ERRATA.

VOL. CXII (ABSTR., 1917).

Page	Line	
i. 277	4	for "3:6-dimethyl-1:4-benzopyrone" read "3:6-dimethyl-2:5-dihydro-1:4-benzopyrone."
"	13	for "3:6-dimethyl-1:4-benzopyrone" read "3:6-dimethyl-2:3-dihydro-1:4-benzopyrone."

VOL. CXIV (ABSTR., 1918).

ii. 366	20	for "tetradimite" read "tetradyomite."
"	"	" "grunlingite" read "grünlingite."

VOL. CXVI (ABSTR., 1919).

ii. 337	14*	for "Aktiebolag" read "Aktiebolag."
ii. 563	28*	col. ii. insert "Jackson, Leonard C., mathematical investigation of the stability of A. W. Stewart's atom, ii, 405."

VOL. CXVIII (ABSTR., 1920).

Page	Line	
i. 75	13	} for "Chelidoneum" read "Chelidonium."
	14	
i. 131	18*	} "Heterotropie" read "Heterotrophic."
	5*	
i. 131	24*	"L. E. SANDO" read "C. E. SANDO."
i. 159	17*	"EISNER" read "ELSNER."
i. 207	1	"Potassium" read "Calcium."
"	3	"Potassium" read "Calcium."
i. 389	5*	"ZEILER" read "ZELLER."
i. 391	8	"CASTALDI" read "GASTALDI."
i. 438	5	"3-p-hydroxy-m-methoxymeconine" read "3-p-hydroxy-m-methoxy-phenylmeconine."
i. 561	7	"5:7-dimethoxyacetyl-3-methoxycoumarin" read "5:7-dimethoxy-acetoxy-3-methoxycoumarin."
i. 659	11*	"CAPELLI" read "CAPPELLI."
i. 726	5	"OMe. C ₆ H ₄ .CH.CH ₂ .OMe" read "OMe. C ₆ H ₄ .CH ₂ .CH ₂ .OMe."
ii. 199	3*	"HELDT" read "HILDT."
ii. 237	15	"26" read "12."
ii. 298	10	"Roasting" read "Roasting."
ii. 308	5*	"3H ₃ PO ₄ " read "3H ₃ PO ₄ ."
ii. 441	23	"Utd" read "Utd."
"	"	"Fören." read "Fören."
"	25	"p > v" read "p > v."
"	27	"33'54" read "33'64."
"	"	"104'27" read "104'37."
ii. 503	11*	"Contact with hydrogen, owing to surface combustion, raises the temperature of one helix," read "Contact with hydrogen, owing to the change in thermal conductivity of the gas, lowers the temperature of one helix."
ii. 729	23*	"REICHENSTEIN" read "REICHENSTEIN."
ii. 753	20	"GARNER, and DOROTHY WEBSTER" read "GARNER, FREDERICK CHALLENGER, and DOROTHY WEBSTER."

* From bottom.

INSTRUCTIONS TO ABSTRACTORS,

GIVING THE

NOMENCLATURE AND SYSTEM OF NOTATION

ADOPTED IN THE ABSTRACTS.

THE object of the abstracts of chemical papers published elsewhere than in the Transactions of the Society is to furnish the Fellows with a concise account of the progress of chemical science from month to month. It must be understood that as the abstracts are prepared for the information of the Fellows in general, they cannot possibly be made so full or so detailed as to obviate on the part of those who are engaged on special investigations the necessity of consulting the original memoirs.

1. Titles of papers must be given literally.
2. Before beginning to write the abstract, the whole of the original paper must be read, in order that a judgment may be formed of its importance and of the scale on which the abstract should be made.
3. In the case of papers dealing with subjects not strictly chemical, the abstract should refer only to matters of chemical interest in the original.
4. The abstract should consist mainly of the expression, in the abstractor's own words, of the substance of the paper.
5. The abstract should be made as short as is consistent with a clear and accurate statement of the author's results.
6. A concise statement showing the general trend of the investigation should be given at the commencement of those abstracts where the nature of the original permits of it.
7. If an abstract of a paper on the same subject, either by the author of the paper abstracted, or by some other author, has already appeared, note should, as a rule, be made of this fact.
8. Matter which has appeared once in the *Abstracts* is not to be abstracted again, a reference being given to the volume in which the abstract may be found.
9. As a rule, details of methods of preparation or analysis, or generally speaking of work, are to be omitted, unless such details are essential to the understanding of the results, or have some independent value. Further, comparatively unimportant compounds, such as the inorganic salts of organic bases or acids, should be mentioned quite shortly. On the other hand, data such as melting and boiling points, sp. gr., specific rotation, &c., must be given in every case unless recorded in earlier papers.

Nomenclature.

10. Employ names such as *sodium chloride*, *potassium sulphate* for inorganic compounds, and use the terminals *ous* and *ic* only in distinguishing compounds of different orders derived from the same elementary radicle; such, for instance, as mercurous and mercuric chlorides, sulphurous and sulphuric acids.

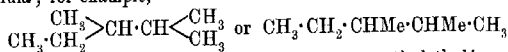
11. Term compounds of metallic radicles with the OH-group *hydroxides* and not hydrates, the name hydrate being reserved for compounds supposed to contain water of combination or crystallisation.

12. Term salts containing an amount of metal equivalent to the displaceable hydrogen of the acid, *normal* and not neutral salts, and assign names such as sodium hydrogen sulphate, disodium hydrogen phosphate, &c., to the acid salts. Basic salts as a rule are best designated merely by their *formulae*.

13. Names in common use for oxides should be employed, for example: NO, nitric oxide; CO₂, carbon dioxide; P₄O₁₀, phosphoric oxide; As₂O₃, arsenious oxide; Fe₂O₃, ferric oxide.

14. In open chain compounds, Greek letters must be used to indicate the position of a substituent, the letter α being assigned to the first carbon atom in the formula, except in the case of CN and CO₂H, for example, CH₃·CH₂·CH₂·CH₂I α -iodobutane, CH₃·CH₂·CH₂·CN α -cyanopropane.

15. Isomeric open chain compounds are most conveniently represented as substitution derivatives of the longest carbon chain in the formula; for example,



should be termed $\beta\gamma$ -dimethylpentane not methylethylisopropyl-

methane, and $\begin{array}{c} \text{CH}_3 \\ \diagup \quad \diagdown \\ \text{CH}_3 > \text{CH} \cdot \text{CH} < \text{CH}_3 \\ \diagdown \quad \diagup \\ \text{CO}_2\text{H} \end{array}$ or CH₃·CHMe·CHMe·CO₂H should be termed $\alpha\beta$ -dimethylbutyric acid, not $\alpha\beta\beta$ -trimethylpropionic, or α -methylisovaleric, or methylisopropylacetic acid.

16. Use names such as methane, ethane, &c., for the normal paraffins or hydrocarbons of the C_nH_{2n+2} series of the form CH₃·[CH₂]_n·CH₃, &c. Term the hydrocarbons C₂H₄ and C₂H₂ ethylene and acetylene respectively (not ethene and ethine). Homologues of the ethylene series are to be indicated by the suffix *-ene*, and those of the acetylene series, wherever possible, by *-yne*. Adopt the name allene for the hydrocarbon CH₂:C:CH₂.

17. Distinguish all hydroxyl derivatives of hydrocarbons by names ending in *ol*. Alcohols should be spoken of as mono-, di-, tri-, or n-hydric, according to the number of OH-groups. Compounds which are not alcohols, but for which names ending in *ol* have been used, are to be represented by names ending in *ole*, if a systematic name cannot be given, thus anisole not anisol, indole not indol. Compounds such as MeONa, EtONa, &c., should be termed sodium methoxide, sodium ethoxide, &c.

18. The radicles indicated in the name of a compound are to be

given in the order fluoro-, chloro-, bromo-, iodo-, nitro-, nitroso-, amino-, imino-, cyano-, thiocyno-, hydroxy-, keto-.

19. Compounds analogous to the acids of the lactic series containing the OH-group should be termed *hydroxy*-derivatives, and not *oxy*-derivatives; for example, hydroxyacetic and not oxyacetic acid. Compounds containing the analogous groups OEt, OPh, OAc, &c., should in like manner be termed ethoxy-, phenoxy-, acetoxy- derivatives. Thus α -ethoxypropionic acid, $\text{OEt}\cdot\text{CHMe}\cdot\text{CO}_2\text{H}$, instead of ethyl-lactic acid; 3,4-diethoxybenzoic acid, $(\text{OEt})_2\text{C}_6\text{H}_3\cdot\text{CO}_2\text{H}$, instead of diethylprotocatechuic acid; and α -acetoxypropionic acid, $\text{OAc}\cdot\text{CHMe}\cdot\text{CO}_2\text{H}$, instead of acetyl-lactic acid. Terms such as diethylprotocatechuic acid should be understood to mean a compound formed by the displacement of hydrogen atoms in the hydrocarbon radicle of protocatechuic acid by ethyl, thus, $\text{C}_6\text{H}(\text{Et})_2(\text{OH})_2\cdot\text{CO}_2\text{H}$, and not $\text{C}_6\text{H}_2(\text{OEt})_2\cdot\text{CO}_2\text{H}$, just as dibromoprotocatechuic acid is understood to be the name of a compound of the formula $\text{C}_6\text{HBr}_2(\text{OH})_2\cdot\text{CO}_2\text{H}$.

20. The term *ether* should be restricted to the oxides of hydrocarbon radicles and their derivatives, and the esters (so-called compound ethers or ethereal salts) should be represented by names similar to those given to metallic salts.

21. When a substituent is one of the groups NH_2 , NHR , NR_2 , NH or NR , its name should end in *ino*; for example, β -aminopropionic acid, $\text{NH}_2\cdot\text{CH}_2\cdot\text{CH}_2\cdot\text{CO}_2\text{H}$, β -anilino-acrylic acid, $\text{NHPh}\cdot\text{CH}:\text{CH}\cdot\text{CO}_2\text{H}$, α -aminopropionic acid, $\text{NH}\cdot\text{CMe}\cdot\text{CO}_2\text{H}$.

22. Compounds of the radicle SO_3H should, whenever possible, be termed sulphonic acids, or failing this, sulpho-compounds; for example, benzenesulphonic acid, sulphobenzoic acid.

23. Basic substances should invariably be indicated by names ending in *ine*, as aniline instead of anilin, the termination *in* being restricted to certain neutral compounds, viz., glycerides, glucosides, bitter principles, and proteins, such as palmitin, amygdalin, albumin. The compounds of basic substances with hydrogen chloride, bromide or iodide should always receive names ending in *ide* and not *ate*, as morphine hydrochloride and not morphine hydrochlorate.

24. The Collective Index, 4th decade (1903-1912) should be adopted as the standard of reference on questions of nomenclature not provided for in the preceding sections.

Notation.

25. In empirical formulae the elements are to be given in the order C, H, O, N, Cl, Br, I, F, S, P, and the remainder alphabetically.

26. Equations should be omitted unless essential to the understanding of the results; as a rule, they should not be written on a separate line, but should "run on" with the text.

27. To economise space, it is desirable:

- (a) That *dots* should be used instead of *dashes* in connecting contiguous symbols or radicles, whenever this does not interfere with the clearness of the formula.

(b) That formulae should be shortened by the judicious employment of the symbols Me for CH_3 , Et for C_2H_5 , Pr^a for $\text{CH}_2\cdot\text{CH}_2\cdot\text{CH}_3$, Pr^s for $\text{CH}(\text{CH}_3)_2$, Ph for C_6H_5 , Py for $\text{C}_4\text{H}_4\text{N}$, Ac for $\text{CO}\cdot\text{CH}_3$, and Bz for $\text{CO}\cdot\text{C}_6\text{H}_5$.

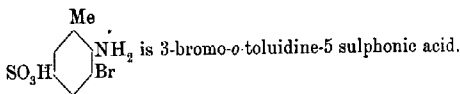
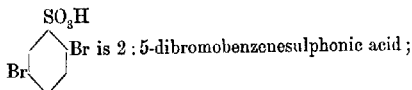
(c) That formulae should be written *in one line* whenever this can be done without obscuring their meaning.

28. In representing the constitution of benzene derivatives, the relative positions of the radicles in the symbol of benzene should be indicated by numerals, instead of by means of the hexagon formula.

(a) The abbreviations *o*-, *m*-, and *p*-, should be used in place of 1:2- or ortho-, 1:3- or meta-, and 1:4- or para-.

(b) In numbering positions in the case of substitution derivatives of phenol, aniline, benzonitrile, benzoic acid, benzenesulphonic acid, benzaldehyde, and toluene, the characteristic radicle of each of these parent substances is to be regarded as in position 1 (compare Collective Index).

(c) Names of substitution derivatives should be given in such a way that the position of the substituent is indicated by a numeral prefixed; for example:—



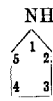
29. In representing the constitution of derivatives of other "closed chain" hydrocarbons, graphic formulae should not be employed, but the system of numbering positions indicated in Richter's *Lexikon der Kohlenstoff-Verbindungen* (3rd edition, 1910, pp. 14—26) should be used, of which the following schemes may be regarded as typical:—



Furan.



Thiophen.



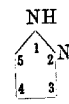
Pyrrole.



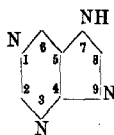
Oxazole.



Thiazole.



Pyrazole.



Purine.*



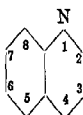
Pyridine.



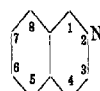
Indole.



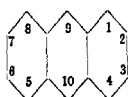
Naphthalene.



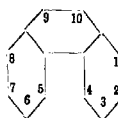
Quinoline.



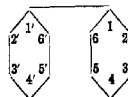
isoQuinoline.



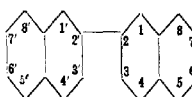
Anthracene.



Phenanthrene.



Diphenyl

 $\beta\beta$ -Dinaphthyl.**Manuscript.**

30. In view of the difficulty of dealing with MSS. of widely varying sizes, abstracts cannot be accepted unless written on quarto paper (10 x 8 in.).

31. Not more than one abstract must appear on a sheet.

32. When an abstract exceeds a sheet in length, the sheets must be fastened together by means of gum at the top left-hand corner.

33. The name of the abstractor must be written diagonally at the top left-hand corner of the first sheet of the abstract.

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34. Abstractors are expected to read and correct proofs carefully, and to check all formulae and figures against MSS.

35. All proofs, however small, must be returned to the Sub-Editor not later than 24 hours after receipt from the printers.

. The Editor's decision, in all matters connected with the abstracts, must be considered final.

* This numbering, proposed originally by E. Fischer, is adopted in the text of the *azikon*.

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ABBREVIATED TITLE.	JOURNAL.
<i>Abh. Böhm. Akad.</i> . . .	Abhandlungen der Böhmischen Akademie.
<i>Abh. Deut. Naturwiss. Med. Ver. Böhmen.</i> . . .	Abhandlungen der Deutschen Naturwissenschaftlichen und Medizinischen Verein, Böhmen.
<i>Acad. Sci. Fennicae</i> . . .	Acta Societatis Scientiarum Fennicae.
<i>Agric. Bull. F. M. S.</i> . . .	Agricultural Bulletin of the Federated Malay States.
<i>Agric. J. India</i> . . .	Agricultural Journal of India.
<i>Agric. Ledger</i> . . .	Agricultural Ledger.
<i>Agric. Res. Inst., Pusa Rep.</i> (Bull.)	Agricultural Research Institute, Pusa, Report and Bulletins.
<i>Allgem. Z. Bierbrau. u. Malzfabr.</i> . . .	Allgemeine Zeitschrift für Bierbrauerei und Malzfabrikation.
<i>Amer. J. Bot.</i> . . .	American Journal of Botany.
<i>Amer. J. Dis. Children</i> . . .	American Journal of Diseases of Children.
<i>Amer. J. Pharm.</i> . . .	American Journal of Pharmacy.
<i>Amer. J. Physiol.</i> . . .	American Journal of Physiology.
<i>Amer. J. Pub. Health</i> . . .	American Journal of Public Health.
<i>*Amer. J. Sci.</i> . . .	American Journal of Science.
<i>Amer. Min.</i> . . .	American Mineralogist.
<i>Anat. Fis. Quim.</i> . . .	Anales de la Sociedad Española Física y Química.
<i>Anat. Soc. Quim. Argentina</i> . . .	Anales de la Sociedad Química Argentina.
<i>*Analyst</i> . . .	Analyst.
<i>Annalen</i> . . .	Justus Liebig's Annalen der Chemie.
<i>Ann. Bot.</i> . . .	Annals of Botany.
<i>Ann. di Bot.</i> . . .	Annali di Botanica.
<i>Ann. Chim.</i> . . .	Annales de Chimie.
<i>*Ann. Chim. Analyt.</i> . . .	Annales de Chimie Analytique.
<i>Ann. Falsif.</i> . . .	Annales des Falsifications.
<i>Ann. Geol. Min. Russie</i> . . .	Annuaire de la Géologie et de la Minéralogie de Russie.
<i>Ann. hyg. pub. med. legale.</i> . . .	Annales d'hygiène publique et de médecine légale.
<i>Ann. Inst. Pasteur</i> . . .	Annales de l'Institut Pasteur.
<i>Ann. Physik</i> . . .	Annalen der Physik.
<i>Ann. Physique</i> . . .	Annales de Physique.
<i>Ann. R. Staz. Chim. Agrar. Sperim.</i> . . .	Annali della R. Stazione Chimico Agraria Sperimentale di Roma.
<i>Ann. sci. Univ. Jassy</i> . . .	Annales scientifiques de l'Université de Jassy.
<i>Ann. Soc. Geol. Belg.; Publ. rel. au Congo Belge</i> . . .	Annales de la Société géologique de Belgique: Publications relatives au Congo Belge.
<i>Apoth. Zeit.</i> . . .	Apotheker-Zeitung.
<i>Arch. Gebiet. Physik, Math. Chem.</i> . . .	Arbeiten aus dem Gebiete der Physik, Mathematik und Chemie.
<i>Arch. Anat. Physiol.</i> . . .	Archiv für Anatomie und Physiologie.
<i>Arch. Chem. Mikros.</i> . . .	Archiv Chemie und Mikroskopie.
<i>Arch. Entw.-mech. Org.</i> . . .	Archiv für Entwicklungsmechanik der Organismen.
<i>Arch. expt. Path. Pharm.</i> . . .	Archiv für experimentelle Pathologie und Pharmakologie.
<i>Arch. Farm. sperim. Sci. aff.</i> . . .	Archivio di Farmacologia sperimentale e Scienze affini.
<i>Arch. Fisiol.</i> . . .	Archivio di Fisiologia.
<i>Arch. Int. Med.</i> . . .	The Archives of Internal Medicine.
<i>Arch. ital. Biol.</i> . . .	Archives italiennes de Biologie.
<i>Arch. Med. Pharm. milit.</i> . . .	Archives de Médecine et de Pharmacie militaires.
<i>Arch. Néerland.</i> . . .	Archives Néerlandaises de sciences exactes et naturelles.

ABBREVIATED TITLE.	JOURNAL.
<i>Arch. Néerland. physiol.</i> .	Archives Néerlandaises de physiologie de l'homme et des animaux.
* <i>Arch. Pharm.</i> . . .	Archiv der Pharmazie.
<i>Arch. Sci. biol. Petrograd.</i> .	Archives des Sciences biologiques, Petrograd.
<i>Arch. Sci. phys. nat.</i> . . .	Archives des Sciences physiques et naturelles.
<i>Arch. Suikerind. Ned. Indie</i> .	Archief voor de Suikerindustrie in Nederlandsch-Indië.
<i>Arkiv. Kem. Min. Geol.</i> . .	Arkiv. för Kemi, Mineralogi och Geologi.
* <i>Atti R. Acad. Lincei</i> . . .	Atti della Reale Accademia dei Lincei.
<i>Atti R. Acad. Sci. Torino</i> . .	Atti della Reale Accademia delle Scienze di Torino.
<i>Atti R. Ist. Veneto Sci.</i> . .	Atti del Istituto Veneto di Scienze, Lettere ed Arti.
<i>Aust. Pharm. Notes</i> . . .	Australian Pharmaceutical Notes and News.
<i>Beitr. Min. Japan</i> . . .	Beiträge zur Mineralogie von Japan.
<i>Berg. Hüttenm. Rundsch.</i> . .	Berg- und Hüttenmannisches Rundschau.
* <i>Ber.</i> . . .	Berichte der Deutschen chemischen Gesellschaft.
<i>Ber. Deut. bot. Ges.</i> . . .	Berichte der Deutschen botanischen Gesellschaft.
* <i>Ber. Deut. pharm. Ges.</i> . .	Berichte der Deutschen pharmazeutischen Gesellschaft.
<i>Ber. Deut. physikal. Ges.</i> . .	Berichte der Deutschen physikalischen Gesellschaft.
<i>Ber. Oberhess. Ges. Natur. Heilkunde.</i> . . .	Berichte der Oberhessischen Gesellschaft für Natur- und Heilkunde zu Giessen.
<i>Ber. Ohara Inst. landw. Forsch.</i> . . .	Berichte des Ohara Instituts für landwirtschaftliche Forschungen.
<i>Ber. Sächs. Ges. Wiss.</i> . . .	Berichte über die Verhandlungen der Sächsischen Gesellschaft der Wissenschaften.
<i>Berlin. Klin. Woch.</i> . . .	Berliner Klinische Wochenschrift.
* <i>Bied. Zentr.</i> . . .	Biedermann's Zentralblatt für Agrikulturchemie und rationalen Landwirtschafts-Betrieb.
<i>Biochem. Bull.</i> . . .	Biochemical Bulletin.
* <i>Biochem. J.</i> . . .	Biochemical Journal.
* <i>Biochem. Zeitsch.</i> . . .	Biochemische Zeitschrift.
<i>Bd. of Trade J.</i> . . .	Board of Trade Journal.
<i>Bol. Acad. Nac. Ciencias, Cordoba.</i> . .	Boletín de la Academia Nacional de Ciencias, Córdoba.
* <i>Boll. Chim. farm.</i> . . .	Bollettino Chimico farmaceutico.
<i>Boll. Soc. Geol. Ital.</i> . . .	Bollettino della Società Geologica Italiana.
<i>Boll. Soc. Med.-Chirurg.</i> . .	Bollettino della Società Medico-Chirurgica, Pavia.
<i>Bot. Centr.</i> . . .	Botanisches Centralblatt.
<i>Bot. Gaz.</i> . . .	Botanical Gazette.
<i>Brass. Malt.</i> . . .	Brasserie et Malterie.
<i>Brau- u. Malzind.</i> . . .	Brau- u. Malzindustrie.
<i>Braunkohle</i> . . .	Braunkohle.
* <i>Brennstoff-Chem.</i> . . .	Brennstoff-Chemie.
<i>Brewers' J.</i> . . .	Brewers' Journal.
<i>Brit. J. Phot.</i> . . .	British Journal of Photography.
<i>Brit. Med. J.</i> . . .	British Medical Journal.
<i>Brit. Pat.</i> . . .	British Patent.
<i>Buletinul Chim.</i> . . .	Buletinul Chimie.
<i>Bul. Soc. Chim. România</i> . .	Buletinul Societății de Chimie din România.
<i>Bul. Soc. Romane Stiin.</i> . .	Buletinul Societății Române de Științe.
<i>Bull. Acad. roy. Belg.</i> . . .	Académie royale de Belgique—Bulletin de la Classe des Sciences.
<i>Bull. Acad. Sci. Cracov</i> . . .	Bulletin international de l'Académie des Sciences de Cracovie.
<i>Bull. Acad. Sci. Petrograd.</i> .	Bulletin de l'Académie Impériale des Sciences de Petrograd.
<i>Bull. Acad. Sci. Roumaine</i> . .	Bulletin de la Section Scientifique de l'Académie Roumaine.

JOURNALS FROM WHICH ABSTRACTS ARE MADE.

v

ABBREVIATED TITLE.	JOURNAL.
Bull. Agric. Intell. . .	Bulletin of the Bureau of Agricultural Intelligence and of Plant Diseases.
Bull. Assoc. Chim. Sucr. .	Bulletin de l'Association des Chimistes de Sucre et de Distillerie.
Bull. Bureau of Standards (U.S.A.).	Bulletin of the Bureau of Standards (U.S.A.).
Bull. Com. Géol. Finlande.	Bulletin de la Commission Géologique de Finlande.
Bull. Forest Exp. Stat. Meguro.	Bulletin of the Forest Experiment Station, Meguro, Tokyo.
Bull. gén. Thérap. . .	Bulletin général de Thérapeutique médicale, chirurgicale, obstétricale.
Bull. Geol. Inst. Univ. Upsala.	Bulletin of the Geological Institution of the University of Upsala.
Bull. Geol. Soc. Amer. . .	Bulletin of the Geological Society of America.
Bull. Geol. Survey, U.S.A.	Bulletin of the U.S. Geological Survey.
Bull. Geol. Survey, West Australia.	Bulletin of the Geological Survey, West Australia.
Bull. Imp. Inst. . .	Imperial Institute Bulletin.
Bull. Johns Hopkins Hospital.	Bulletin of Johns Hopkins Hospital.
Bull. School Mines and Met., Univ. Missouri .	Bulletin of the School of Mines and Metallurgy, University of Missouri.
Bull. Sci. Pharmacol. .	Bulletin des Sciences Pharmacologiques.
*Bull. Soc. chim. . .	Bulletin de la Société chimique de France.
*Bull. Soc. chim. Belg. .	Bulletin de la Société chimique de Belgique.
Bull. Soc. chim. biol. .	Bulletin de la Société de chimie biologique.
Bull. Soc. d'Encour. . .	Bulletin de la Société d'Encouragement pour l'Industrie Nationale.
Bull. Soc. franç. Min. .	Bulletin de la Société française de Minéralogie.
Bull. Soc. Franç. Phot. .	Bulletin de la Société Française de Photographie.
Bull. Soc. Ind. Mulhouse .	Bulletin de la Société Industrielle de Mulhouse.
Bull. Soc. Ind. Nord . .	Bulletin de la Société Industrielle du Nord de la France.
Bull. Soc. Oural. Sci. Nat.	Bulletin de la Société Ouralienne des Amateurs des Sciences Naturelles à Catherineberg.
Bull. Soc. Pharm. Bordeaux	Bulletin des Travaux de la Société de Pharmacie de Bordeaux.
Bull. Wellcome Trop. Res. Lab.	Bulletin of the Wellcome Tropical Research Laboratory.
Cairo Sci. J.	Cairo Scientific Journal.
Canada Dept. Mines Publ. .	Canada Department of Mines Publications.
*Canadian Chem. J. . . .	Canadian Chemical Journal.
Canadian Med. Assoc. J. .	Canadian Medical Association Journal.
Caoutchouc et Gutta-Percha	Le Caoutchouc et le Gutta-Percha.
*Centr. Bakt. For. . . .	Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten.
Centr. Min.	Centralblatt für Mineralogie, Geologie und Palaeontologie.
Centr. Zuckerind. . . .	Centralblatt für Zuckerindustrie.
Ch. of Comm. J.	Chamber of Commerce Journal.
Chem. App.	Chemische Apparatur.
Chem. Erde	Chemie der Erde.
Chem. Ind.	Chemische Industrie.
*Chem. and Met. Eng. . .	Chemical and Metallurgical Engineering.
*Chem. News	Chemical News.
Chem. Trade J.	Chemical Trade Journal.
Chem. Umschau Fett-Ind.	Chemische Umschau über die Fett- und Harz-Industrie.
*Chem. Weekblad	Chemisch Weekblad.
*Chem.-Zeit.	Chemiker-Zeitung.

ABBREVIATED TITLE.	JOURNAL.
<i>Chem. Zeitsch.</i>	Chemische Zeitschrift.
* <i>Chem. Zentr.</i>	Chemisches Zentralblatt.
<i>Chem. and Drug.</i>	Chemist and Druggist.
<i>Chémik Polski</i>	Chémik Polski.
* <i>Chim. et Ind.</i>	Chimie et Industrie.
<i>Collegium</i>	Collegium.
* <i>Compt. rend.</i>	Comptes rendus hebdomadaires des Séances de l'Académie des Sciences.
<i>Compt. rend. Soc. Biol.</i>	Comptes rendus hebdomadaires de Séances de la Société de Biologie.
Comptes rend. Trav. Lab. Carlsberg	Comptes rendus des Travaux de Laboratoire de Carlsberg.
D. R.-P.	Deutsches Reichs-Patent.
Dept. Chem. S. Australia, Bull.	Department of Chemistry, South Australia, Bulletins.
<i>Dent. med. Week.</i>	Deutsche medizinische Wochenschrift.
<i>Econ. Geol.</i>	Economic Geology.
<i>Econ. Proc. Roy. Dubl. Soc.</i>	Economic Proceedings of the Royal Dublin Society.
<i>Elektrochem. Zeits.</i>	Elektrochemische Zeitschrift.
<i>Engineering</i>	Engineering.
<i>Eng. and Min. J.</i>	Engineering and Mining Journal.
<i>Exper. Stat. Rec.</i>	Experimental Station Record.
<i>Farber-Zeit.</i>	Farber-Zeitung.
<i>Farben-Zeit.</i>	Farben-Zeitung.
<i>Feuerungstechnik</i>	Feuerungstechnik.
<i>Flora</i>	Flora.
<i>Földtani Közlöny</i>	Földtani Közlöny.
<i>Fr. Pat.</i>	French Patent.
<i>Gas J.</i>	Gas Journal.
<i>Gas World</i>	Gas World.
* <i>Gazzetta</i>	Gazzetta chimica italiana.
<i>Geol. För. Förh.</i>	Geologiska Föreningens i Stockholm Förhandlingar.
<i>Geol. Mag.</i>	Geological Magazine.
<i>Gerber</i>	Gerber.
* <i>Giorn. Chim. Ind. Appl.</i>	Giornale di Chimica Industriale ed Applicata.
<i>Gummi-Zeit.</i>	Gummi-Zeitung.
<i>Handl. Vijft. Nat.</i>	Handelingen van het Vijftende Natuur.
<i>Hawaii Agric. Exp. Stat. Bull.</i>	Hawaii Agricultural Experiment Station Bulletins.
<i>Heart</i>	Heart.
<i>Helv. Chim. Acta</i>	Helvetica Chimica Acta.
<i>Hyg. Rundsch.</i>	Hygienische Rundschau.
<i>Indian J. Med. Res.</i>	Indian Journal of Medical Research.
<i>India-rubber J.</i>	India-rubber Journal.
<i>Int. Sugar J.</i>	International Sugar Journal.
<i>Int. Zeitsch. phys.-chem. Biol.</i>	Internationale Zeitschrift für physikalisch-chemische Biologie.
<i>Iron Steel Inst. Carnegie Schol. Mem.</i>	Iron and Steel Institute, Carnegie Scholarship Memoirs.
<i>Jahrb. Geol. Reichsanst.</i>	Jahrbuch der geologischen Reichsanstalt.
<i>Jahrb. Min.</i>	Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie.
<i>Jahrb. Min. Beil.-Bd.</i>	Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie, Beilage-Band.
<i>Jahrb. Radioaktiv. Elektronik.</i>	Jahrbuch der Radioaktivität und Elektronik.
* <i>Jahrb. wiss. Bot.</i>	Jahrbuch für wissenschaftliche Botanik.
<i>Jahresber. Ges. vaterl. Kultur.</i>	Jahresbericht der schlesischen Gesellschaft für vaterländische Kultur.

JOURNALS FROM WHICH ABSTRACTS ARE MADE.

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ABBREVIATED TITLE.	JOURNAL.
<i>Jernk. Ann.</i>	Jern-kontorets Annaler.
* <i>J. Agric. Res.</i>	Journal of Agricultural Research.
* <i>J. Agric. Sci.</i>	Journal of Agricultural Science.
<i>J. Amer. Ceram. Soc.</i>	Journal of the American Ceramic Society.
* <i>J. Amer. Chem. Soc.</i>	Journal of the American Chemical Society.
<i>J. Amer. Leather Chem. Assoc.</i>	Journal of the American Leather Chemists' Association.
<i>J. Amer. Med. Assoc.</i>	Journal of the American Medical Association.
<i>J. Assoc. Off. Agric. Chem.</i>	Journal of the Association of Official Agricultural Chemists.
* <i>J. Biol. Chem.</i>	Journal of Biological Chemistry, New York.
<i>J. Board Agric.</i>	Journal of the Board of Agriculture.
<i>J. Canad. Min. Inst.</i>	Journal of the Canadian Mining Institute.
<i>J. Chem. Ind. Tokyo</i>	See Kōgyō-Kwagaku-Zasshi.
<i>J. Chem. Met. Soc. S. Africa</i>	Journal of the Chemical, Metallurgical, and Mining Society of South Africa.
<i>J. Chim. physique</i>	Journal de Chimie physique.
<i>J. Coll. Agric. Tohoku</i>	Journal of the College of Agriculture, Tohoku Imperial University, Japan.
<i>J. Coll. Agric. Tokyo</i>	Journal of the College of Agriculture, Tokyo Imperial University, Japan.
<i>J. Coll. Eng. Univ. Tokyo</i>	Journal of the College of Engineering, University of Tokyo.
* <i>J. Coll. Sci. Tokyo</i>	Journal of the College of Science, Imperial University of Tokyo.
<i>J. Exp. Med.</i>	Journal of Experimental Medicine.
* <i>J. Franklin Inst.</i>	Journal of the Franklin Institute.
<i>J. Gasbeleucht.</i>	Journal für Gasbeleuchtung und Wasserversorgung.
<i>J. gen. Physiol.</i>	Journal of general Physiology.
<i>J. Genetics</i>	Journal of Genetics.
<i>J. Geol.</i>	Journal of Geology.
<i>J. Geol. Soc. Tokyo</i>	Chishitsugaku Zasshi (Journal of the Geological Society of Tokyo).
<i>J. Hygiene</i>	Journal of Hygiene.
* <i>J. Ind. Eng. Chem.</i>	Journal of Industrial and Engineering Chemistry.
* <i>J. Ind. Inst. Sci.</i>	Journal of the Indian Institute of Science.
<i>J. Inst. Brewing</i>	Journal of the Institute of Brewing.
<i>J. Inst. Petroleum Tech.</i>	Journal of the Institute of Petroleum Technologists.
<i>J. Landw.</i>	Journal für Landwirtschaft.
<i>J. Marine Biol. Assoc. U.K.</i>	Journal of the Marine Biological Association of the United Kingdom.
<i>J. Med. Res.</i>	Journal of Medical Research.
<i>J. Path. Bact.</i>	Journal of Pathology and Bacteriology.
<i>J. Opt. Soc. Amer.</i>	Journal of the Optical Society of America.
* <i>J. Pharm. Chim.</i>	Journal de Pharmacie et de Chimie.
<i>J. Pharm. Exptl. Ther.</i>	Journal of Pharmacology and Experimental Therapeutics.
* <i>J. Physical Chem.</i>	Journal of Physical Chemistry.
<i>J. Physiol.</i>	Journal of Physiology.
<i>J. Physiol. Path. gén.</i>	Journal de Physiologie et de Pathologie générale.
* <i>J. pr. Chem.</i>	Journal für praktische Chemie.
<i>J. Proc. Asiatic Soc. Bengal.</i>	Journal and Proceedings of the Asiatic Society of Bengal.
<i>J. Roy. Agric. Soc.</i>	Journal of the Royal Agricultural Society.
<i>J. Roy. Army Med. Corps</i>	Journal of the Royal Army Medical Corps.
<i>J. Roy. Hort. Soc.</i>	Journal of the Royal Horticultural Society.
<i>J. Roy. Soc. New South Wales.</i>	Journal and Proceedings of the Royal Society of New South Wales.
<i>J. Roy. Soc. West Australia</i>	Journal of the Royal Society of West Australia.

ABBREVIATED TITLE.	JOURNAL.
* <i>J. Russ. Phys. Chem. Soc.</i>	Journal of the Physical and Chemical Society of Russia.
<i>J. Soot. Met. Soc.</i>	Journal of the Scottish Meteorological Society.
<i>J. Soc. Arts</i>	Journal of the Royal Society of Arts.
<i>J. Soc. Dyers and Col.</i>	Journal of the Society of Dyers and Colourists.
<i>J. Soc. Leather Trades Chem.</i>	Journal of the Society of Leather Trades Chemists.
<i>J. Soc. Glass Technology</i>	Journal of the Society of Glass Technology.
<i>J. S. African Assoc. Anal. Chem.</i>	Journal of the South African Association of Analytical Chemists.
<i>J. Textile Inst.</i>	Journal of the Textile Institute.
<i>J. Usines Gaz</i>	Journal des Usines à Gaz.
<i>J. Washington Acad. Sci.</i>	Journal of the Washington Academy of Science.
<i>J. West Scotland Iron Steel Inst.</i>	Journal of the West of Scotland Iron and Steel Institute.
<i>K. Svenska Vet.-Akad. Handl.</i>	Kongliga Svenska Vetenskaps Akademiens Handlingar.
<i>Kentucky Exp. Stat. Bull.</i>	Kentucky Experimental Station, Bulletin.
<i>Keram. Rundsch.</i>	Keramisch Rundschau.
<i>Kew Bull.</i>	Kew Bulletin.
<i>Kongl. Landtbr. Handl. Tidskr.</i>	See Bull. Agric. Intell.
<i>Kōgyō-Kwagaku-Zasshi (J. Chem. Ind. Japan).</i>	Kōgyō-Kwagaku-Zasshi (Journal of Chemical Industry, Japan).
* <i>Kolloid Zeitsch.</i>	Kolloid Zeitschrift.
* <i>Koll. Chem. Beihefte</i>	Kolloid-chemische Beihefte.
<i>Kosmos</i>	Kosmos (Lemberg).
<i>Kühn-Archiv</i>	Kühn-Archiv.
<i>Kunststoffe</i>	Kunststoffe.
<i>Lancet</i>	The Lancet.
<i>Landw. Jahrb.</i>	Landwirtschaftliche Jahrbücher.
<i>Landw. Versuchs-Stat.</i>	Die landwirtschaftlichen Versuchs-Stationen.
<i>Leather Trades Rev.</i>	Leather Trades Review.
<i>Le Radium</i>	Le Radium.
<i>Local Govt. Bd. Reports</i>	Local Government Board Reports.
<i>Louisiana Bull.</i>	Louisiana Bulletin.
<i>Louisiana Planter</i>	Louisiana Planter.
<i>Lunds. Univ. Årsskr.</i>	Lunds Universitets Års-skrift.
<i>Math. és Termész. Ért.</i>	Mathematikai és Természettudományi Értesítő, Budapest.
<i>Medd. K. Vetenskapsakad. Nobel-Inst.</i>	Meddelanden från Kongl-Vetenskapsakademiens Nobel-Institut.
<i>Medd. om Grönland</i>	Meddelser om Grönland.
<i>Med. Chron.</i>	Medical Chronicle.
<i>Med. Klinik</i>	Medizinische Klinik.
<i>Mem. Acad. Sci. Petrograd.</i>	Mémoires de l'Académie Impériale des Sciences de Petrograd.
<i>Mem. Accad. Lincei</i>	Memorie della Reale Accademia dei Lincei.
<i>Mem. Accad. Sci. Torino</i>	Memorie della Reale Accademia delle Scienze di Torino.
<i>Mem. Coll. Sci. Kyōtō</i>	Memoirs of the College of Science, Kyōtō Imperial University.
<i>Mem. Coll. Sci. and Eng. Kyōtō Imp. Univ.</i>	Memoirs of the College of Science and Engineering, Kyōtō Imperial University.
<i>Mem. Dept. Agric. India</i>	Memoirs of the Department of Agriculture in India.
<i>Mem. Manchester Phil. Soc.</i>	Memoirs and Proceedings of the Manchester Literary and Philosophical Society.
<i>Mem. Soc. Ing. Civ.</i>	Mémoires de la Société des Ingénieurs Civils de France.
<i>Mem. Soc. Natur. Kiev</i>	Mémoires de la Société des Naturalistes de Kiev.

JOURNALS FROM WHICH ABSTRACTS ARE MADE.

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ABBREVIATED TITLE.	JOURNAL.
<i>Mem. Soc. Toscana Sci. Nat.</i>	Memorie della Società Toscana di Scienze naturali residente in Pisa.
<i>Metall u. Erz</i>	Metall und Erz.
<i>Metrop. Water Bd. Rep.</i>	Metropolitan Water Board Reports.
<i>Milch. Zentr.</i>	Milchwirtschaftliches Zentralblatt.
<i>Min. Mag.</i>	Mineralogical Magazine and Journal of the Mineralogical Society.
<i>Mitt. geol. Landesanst.</i>	Mittheilungen der geologischen Landesanstalt von Elsass-Lothringen.
<i>Mitt. Inst. Kohlenw.</i>	Mittheilungen des Institutes für Kohlenvergasung und Nebenproduktengewinnung.
<i>Mitt. k. Materialprüf.</i>	Mittheilungen aus dem königlichen Materialprüfungsamt zu Gross-Lichterfelde West.
<i>Mitt. med. Ges. Tokyo</i>	Mittheilungen der medizinischen Gesellschaft zu Tokyo.
<i>Mitt. Naturforsch. Ges. Halle.</i>	Mittheilungen der Naturforschenden Gesellschaft zu Halle.
<i>*Monatsh.</i>	Monatshefte für Chemie und verwandte Teile anderer Wissenschaften.
<i>Monatsh. Math. Physik</i>	Monatshefte für Mathematik und Physik.
<i>*Mon. Sci.</i>	Moniteur Scientifique.
<i>Month. Not. Roy. Astr. Soc.</i>	Monthly Notices of the Royal Astronomical Society, London.
<i>Münch. med. Woch.</i>	Münchener medizinische Wochenschrift.
<i>Nachr. Ges. Wiss. Göttingen.</i>	Nachrichten von der Königlichen Gesellschaft der Wissenschaften zu Göttingen.
<i>Nature</i>	Nature.
<i>Naturwiss.</i>	Die Naturwissenschaften.
<i>Naturw. Rdsch.</i>	Naturwissenschaftliche Rundschau.
<i>New York Agr. Expt. Sta. Bull.</i>	New York Agricultural Experiment Station Bulletins.
<i>New Zealand Dominion Laby. Rept.</i>	New Zealand Dominion Laboratory Reports.
<i>New Zealand Jnl. of Science and Technology</i>	New Zealand Journal of Science and Technology.
<i>Nova Acta Soc. Sci.</i>	Nova Acta Regiæ Societatis Scientiarum Upsaliensis.
<i>Nuovo Cim.</i>	Il Nuovo Cimento.
<i>Öfversigt. Finska Vet.-Soc.</i>	Öfversigt af Finska Vetenskaps-Societätens Förhandlingar, Helsingfors.
<i>*Oesterr. Chem.-Zeit.</i>	Oesterreichische Chemiker-Zeitung.
<i>Oil and Colour Trades J.</i>	Oil and Colour Trades Journal.
<i>Oil, Paint, and Drug Rep.</i>	Oil, Paint, and Drug Reporter.
<i>Oversigt Danske Vid. Selsk.</i>	Oversigt over det Kongelige Danske Videnskabernes Selskab Forhandlingar.
<i>Pahassapa Quart.</i>	Pahassapa Quarterly.
<i>Paper</i>	Paper.
<i>Papierfabr.</i>	Papier-Fabrikant.
<i>Perf. and Essent. Oil Rec.</i>	Perfumery and Essential Oil Record.
<i>Per. spic. Sofia</i>	Periodicesko spisanie Sofia.
<i>Petroleum</i>	Petroleum.
<i>Pflüger's Archiv</i>	Archiv für die gesammte Physiologie des Menschen und der Thiere.
<i>Pharm. J.</i>	Pharmaceutical Journal.
<i>*Pharm. Weekblad</i>	Pharmaceutisch Weekblad.
<i>*Pharm. Zentr. h.</i>	Pharmaceutische Zentrallhalle.
<i>Phil. Mag.</i>	Philosophical Magazine (The London, Edinburgh and Dublin).
<i>Phil. Trans.</i>	Philosophical Transactions of the Royal Society of London.

ABBREVIATED TITLE.	JOURNAL.
Philippine J. Sci. . . .	Philippine Journal of Science.
Phot. J.	Photographic Journal.
Phot. Korr.	Photographische Korrespondenz.
Physical Rev.	Physical Review.
Physikal. Zeitsch. . . .	Physikalische Zeitschrift.
Proc. Amer. Phil. Soc. .	Proceedings of the American Philosophical Society.
Proc. Amer. Physiol. Soc. .	Proceedings of the American Physiological Society.
*Proc. Amer. Soc. Biol. Chem.	Proceedings of the American Society of Biological Chemists.
Proc. Amer. Soc. Civ. Eng.	Proceedings of the American Society of Civil Engineers.
Proc. Amer. Soc. Testing Materials	Proceedings of American Society for Testing Materials.
Proc. Austral. Inst. Min. Eng.	Proceedings of the Australasian Institute of Mining Engineers.
Proc. Camb. Phil. Soc. .	Proceedings of the Cambridge Philosophical Society.
Proc. Durham Phil. Soc. .	Proceedings of the Durham Philosophical Society.
Proc. Eng. Soc. W. Pa. .	Proceedings of the Engineers' Society of Western Pennsylvania.
Proc. Inst. Civ. Eng. . .	Proceedings of the Institution of Civil Engineers.
Proc. Inst. Mech. Eng. .	Proceedings of the Institution of Mechanical Engineers.
Proc. Inst. Min. and Met. .	Proceedings of the Institution of Mining and Metallurgy.
*Proc. K. Akad. Wetensch. Amsterdam.	Koninklijke Akademie van Wetenschappen te Amsterdam. Proceedings (English version).
Proc. Nat. Acad. Sci. . .	Proceedings of the National Academy of Sciences.
Proc. Nova Scotia Inst. Sci.	Proceedings of the Nova Scotia Institute of Science.
Proc. Phil. Soc. (Glasgow)	Proceedings of the Glasgow Philosophical Society.
Proc. Physical Soc. . . .	Proceedings of the Physical Society of London.
Proc. Physiol. Soc. . . .	Proceedings of the Physiological Society.
Proc. Roy. Inst.	Proceedings of the Royal Institution of Great Britain.
Proc. Roy. Irish Acad. .	Proceedings of the Royal Irish Academy.
*Proc. Roy. Soc.	Proceedings of the Royal Society.
Proc. Roy. Soc. Edinb. .	Proceedings of the Royal Society of Edinburgh.
Proc. Roy. Soc. Med. . .	Proceedings of the Royal Society of Medicine.
Proc. Roy. Soc. Queensland	Proceedings of the Royal Society of Queensland.
Proc. Roy. Soc. Tasmania .	Proceedings of the Royal Society of Tasmania.
Proc. Soc. Exp. Biol. Med. .	Proceedings of the Society for Experimental Biology and Medicine.
Proc. U.S. Nat. Mus. . . .	Proceedings of the United States National Museum.
Proc. verb. Soc. Toscana Sci. Nat.	Processi verbali Società Toscana di Scienze Naturali.
Pulp and Paper Magazine .	Pulp and Paper Magazine.
Quart. J. Exp. Physiol. . .	Quarterly Journal of Experimental Physiology.
Quart. J. Geol. Soc. . . .	Quarterly Journal of the Geological Society.
Quart. J. Med.	Quarterly Journal of Medicine.
Radium in Biol. Heilkunde	Radium in Biologie und Heilkunde.
Rec. Australian Mus. . . .	Records of the Australian Museum.
Rec. trav. bot. Néerland.	Recueil des travaux botaniques Néerlandaises.
*Rec. trav. chim.	Recueil des travaux chimiques des Pays-Bas et de la Belgique.
Rend. Accad. Sci. Fis. Mat. Napoli.	Rendiconto dell' Accademia delle Scienze Fisiche e Matematiche, Napoli.
Rend. Ist. Lomb. Sci. Lett. .	Rendiconto dell' Istituto Lombardo di Scienze e Lettere.
Rend. Soc. Chim. Ital. . .	Rendiconto della Società Chimica Italiana.
Rep. Aust. Assoc. Sci. . .	Report of the Australian Association for the Advancement of Science.

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ABBREVIATED TITLE.	JOURNAL.
<i>Rep. Brit. Assoc.</i> . . .	Report of the British Association for the Advancement of Science.
<i>Rev. gén. Bot.</i> . . .	Revue générale de Botanique.
<i>Rev. Gén. Mat. Col.</i> . . .	Revue Générale des Matières Colorantes.
<i>Rev. Mét.</i> . . .	Revue de Métallurgie.
<i>Rev. Real Acad. Ciencias exact. Madrid.</i>	Revista de la Real Academia de Ciencias exactas, Físicas y Naturales de Madrid.
<i>Riv. Min. Crist. Ital.</i> . . .	Rivista di Mineralogia e Cristallografia Italiana.
<i>Sbornik Klubu Pri.</i> . . .	Sbornik Klubu Přírodovědeckého (Prague).
<i>Schweiz. Apoth. Zeit.</i> . . .	Schweizerische Apotheker Zeitung.
<i>Schweiz. Chem. Zeit.</i> . . .	Schweizerische Chemiker Zeitung.
<i>Science</i> . . .	Science.
<i>Scient. Amer.</i> . . .	Scientific American.
<i>*Sci. Ind. Rep. Roure-Bertrand Fils.</i>	Scientific and Industrial Reports of Roure-Bertrand Fils.
<i>Sci. Proc. Roy. Dubl. Soc.</i> . . .	Scientific Proceedings of the Royal Dublin Society.
<i>Sci. Rep. Tohoku Imp. Univ.</i>	Science Reports, Tohoku Imperial University.
<i>Sci. Trans. Roy. Dubl. Soc.</i>	Scientific Transactions of the Royal Dublin Society.
<i>Seifenfabr.</i> . . .	Der Seifenfabrikant.
<i>Seifensied. Zeit.</i> . . .	Seifensieder Zeitung.
<i>Sitzungsber. Akad. München.</i>	Sitzungsberichte der bayerischen Akademie der Wissenschaften zu München.
<i>Sitzungsber. Akad. Wiss. Wien.</i>	Sitzungsberichte der Akademie der Wissenschaften, Wien.
<i>Sitzungsber. Ges. Naturwiss. Marburg.</i>	Sitzungsberichte der Gesellschaft zur Beförderung der gesammten Naturwissenschaften in Marburg.
<i>Sitzungsber. Heidelberger Akad. Wis.</i>	Sitzungsberichte der Heidelberger Akademie der Wissenschaften.
<i>Sitzungsber. Med. Naturwiss. Ges. Münster.</i>	Sitzungsberichte der Medizinisch-Naturwissenschaftlichen Gesellschaft zu Münster-in-Westfalens.
<i>Sitzungsber. Naturforsch. Ges. Petrograd.</i>	Sitzungsberichte der Naturforschenden Gesellschaft zu Petrograd.
<i>Sitzungsber. Naturforsch. Ges. Rostock.</i>	Sitzungsberichte der Naturforschenden Gesellschaft zu Rostock.
<i>Sitzungsber. phys. med. Ges. Erlangen.</i>	Sitzungsberichte der physikalisch-medizinischen Gesellschaft zu Erlangen.
<i>Sitzungsber. Preuss. Akad. Wiss. Berlin.</i>	Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin.
<i>Skand. Arch. Physiol.</i> . . .	Skandinavisches Archiv für Physiologie.
<i>Smithsonian Miscell. Coll.</i> . . .	Smithsonian Miscellaneous Collections.
<i>*Soil Sci.</i> . . .	Soil Science.
<i>South African J. Sci.</i> . . .	South African Journal of Science.
<i>Sprechsaal.</i> . . .	Sprechsaal.
<i>Stahl u. Eisen</i> . . .	Stahl und Eisen.
<i>Staz. sper. agr. ital.</i> . . .	Stazioni sperimentali agrarie italiane.
<i>Strahlenther.</i> . . .	Strahlentherapie.
<i>Suom. Tied. Toim.</i> . . .	Suomalaisen Tiedekatemian Toimituksia.
<i>Svensk Kem. Tidskr.</i> . . .	Svensk Kemisk Tidskrift.
<i>T.</i> . . .	Transactions of the Chemical Society.
<i>Tekn. Tidsk.</i> . . .	Teknisk Tidskrift.
<i>Ther. Gegenwart.</i> . . .	Die Therapie der Gegenwart.
<i>Ther. Monatsh.</i> . . .	Therapeutische Monatshefte.
<i>Times Eng. Suppl.</i> . . .	Times Engineering Supplement.
<i>Tonind.-Zeit.</i> . . .	Tonindustrie-Zeitung.
<i>Trans. Amer. Electrochem. Soc.</i>	Transactions of the American Electrochemical Society.
<i>Trans. Amer. Inst. Chem. Eng.</i>	Transactions of the American Institute of Chemical Engineers.
<i>Trans. Amer. Inst. Metals</i> . . .	Transactions of the American Institution of Metals.

ABBREVIATED TITLE.	JOURNAL.
Trans. Amer. Inst. Min. Eng.	Transactions of the American Institute of Mining Engineers.
Trans. Ceram. Soc.	Transactions of the English Ceramic Society.
*Trans. Faraday Soc.	Transactions of the Faraday Society.
Trans. Inst. Metals	Transactions of the Institute of Metals.
Trans. Iron and Steel Inst.	Transactions of the Iron and Steel Institute.
Tr. N. Eng. Inst. Min. and Met.	Transactions of the North of England Institute of Mining and Metallurgy.
Trans. New Zealand Inst.	Transactions of the New Zealand Institute.
Trans. Nova Scotia Inst. Sci.	Transactions of the Nova Scotia Institute of Science.
Trans. Path. Soc.	Transactions of the Pathological Society.
Trans. Roy. Irish Acad.	Transactions of the Royal Irish Academy.
Trans. Roy. Soc. Canada	Transactions of the Royal Society of Canada.
Trans. Roy. Soc. Edin.	Transactions of the Royal Society of Edinburgh.
Trav. Mus. Geol. Acad. Sci. Petrograd.	Travaux de Musée Géologique près l'Académie Impériale des Sciences de Petrograd.
Trav. Soc. Natur. Petrograd.	Travaux de la Société Impériale des Naturalistes de Petrograd.
Tsch. Min. Mitt.	Tschermak's Mineralogische Mitteilungen.
U.S. Bureau of Mines, Bull. and Tech. Papers.	United States Bureau of Mines, Bulletins and Technical Papers.
U.S. Bureau Plant Ind.	United States Bureau of Plant Industry.
U.S. Comm. Rept.	United States Commerce Reports, Daily Consular and Trade Reports.
U.S. Dept. Agric. Bull.	United States Department of Agriculture Bulletins.
U.S. Hyg. Labor. Bull.	United States Hygienic Laboratory Bulletins.
U.S. Pat.	United States Patent.
Univ. Illinois Bull.	University of Illinois Bulletins.
Utah Agric. Coll. Exper. Stat. Bull.	Utah Agricultural College Experiment Station Bulletins.
Verh. Geol. Reichsanst. Wien.	Verhandlungen der geologischen Reichsanstalt in Wien.
Verh. Ges. deut. Naturforsch. Aertze.	Verhandlungen der Gesellschaft deutscher Naturforscher und Aerzte.
Verh. Naturhist. med. Ver. Heidelberg.	Verhandlungen des naturhistorisch-medizinischen Vereins zu Heidelberg.
Verh. Naturhist. Rheinal.	Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande und Westfalens.
Verh. Physiol. Ges. Berlin	Verhandlungen der Physiologischen Gesellschaft zu Berlin.
Verh. Schweiz. Nat. Ges.	Verhandlungen der Schweizerischen Naturforschenden Gesellschaft, Basel.
Vict. Mem. Mus. Geol. Survey, Canada.	Victoria Memorial Museum Geological Survey of Canada, Bulletin.
Videnskab. Skrifter	Skrifter udgivne af Videnskabselskabet i Kristiania.
Wiener Klin. Woch.	Wiener Klinische Wochenschrift.
Wiss. Abhandl. Physikal.-Tech. Reichsanst.	Wissenschaftliche Abhandlungen der Physikalisch-Technischen Reichsanstalt.
Wochbl. Papierfabr.	Wochenblatt für Papierfabrikation.
Woch. f. Brau.	Wochenschrift für Brauerei.
Zeitsch. allg. Physiol.	Zeitschrift für allgemeine Physiologie.
*Zeitsch. anal. Chem.	Zeitschrift für analytische Chemie.
*Zeitsch. angew. Chem.	Zeitschrift für angewandte Chemie.
*Zeitsch. anorg. Chem.	Zeitschrift für anorganische und allgemeine Chemie.
Zeitsch. Biol.	Zeitschrift für Biologie.
Zeitsch. deut. Geol. Ges.	Zeitschrift der deutschen Geologischen Gesellschaft.
*Zeitsch. Elektrochem.	Zeitschrift für Elektrochemie.
Zeitsch. exp. Path. Ther.	Zeitschrift für experimentelle Pathologie und Therapie.

ABBREVIATED TITLE.

JOURNAL.

<i>Z. ges. Brauw.</i> . . .	Zeitschrift für das gesamte Brauwesen.
<i>Zeitsch. ges. exp. Med.</i> . .	Zeitschrift für die gesamte experimentelle Medizin.
<i>Z. ges. Schiess- u. Sprengstoffw.</i> . . .	Zeitschrift für das gesamte Schiess- und Sprengstoffwesen.
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